N13 Women At Sea Model

Modeling the effects of bunk and accession plans on women's opportunity to serve at sea

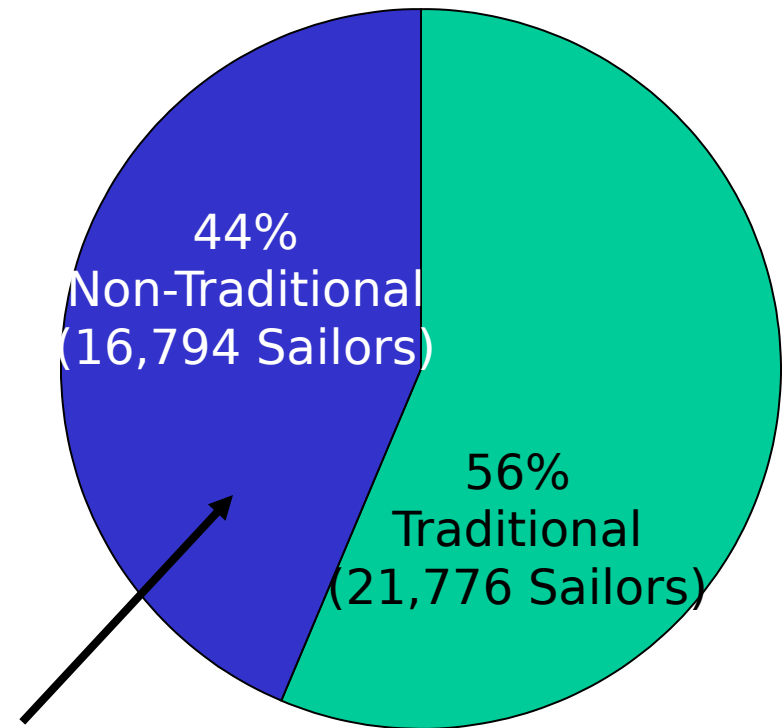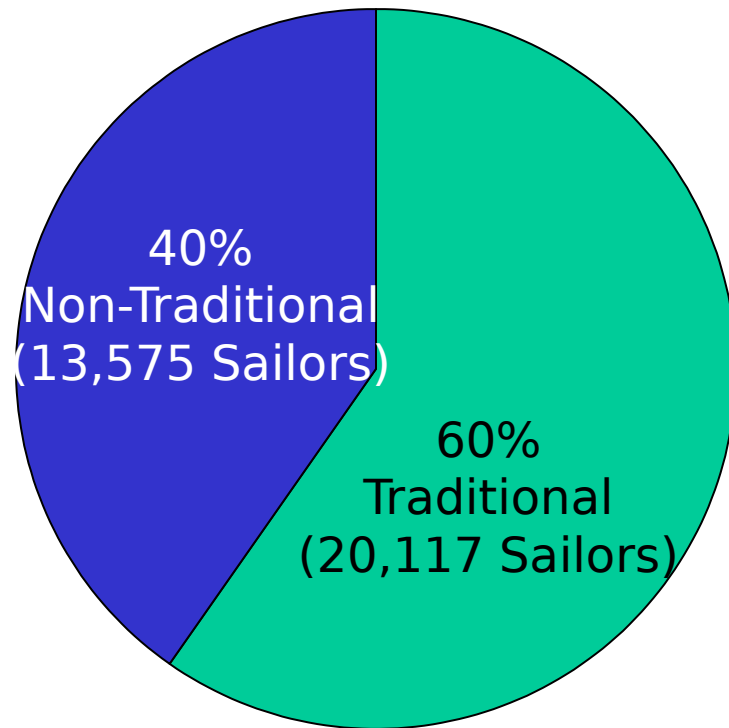**1 April 2003**

WAS Model

- **Why develop a Women at Sea Model?**
- **Factors included in the model**
- **How the model User Interface looks**
- **WAS Model projections**

Assignment of Women to Traditional vs Non-Traditional Ratings

30 Oct 99

30 Sep 02

40%
Non-Traditional
(13,575 Sailors)

60%
Traditional
(20,117 Sailors)

44%
Non-Traditional
(16,794 Sailors)

56%
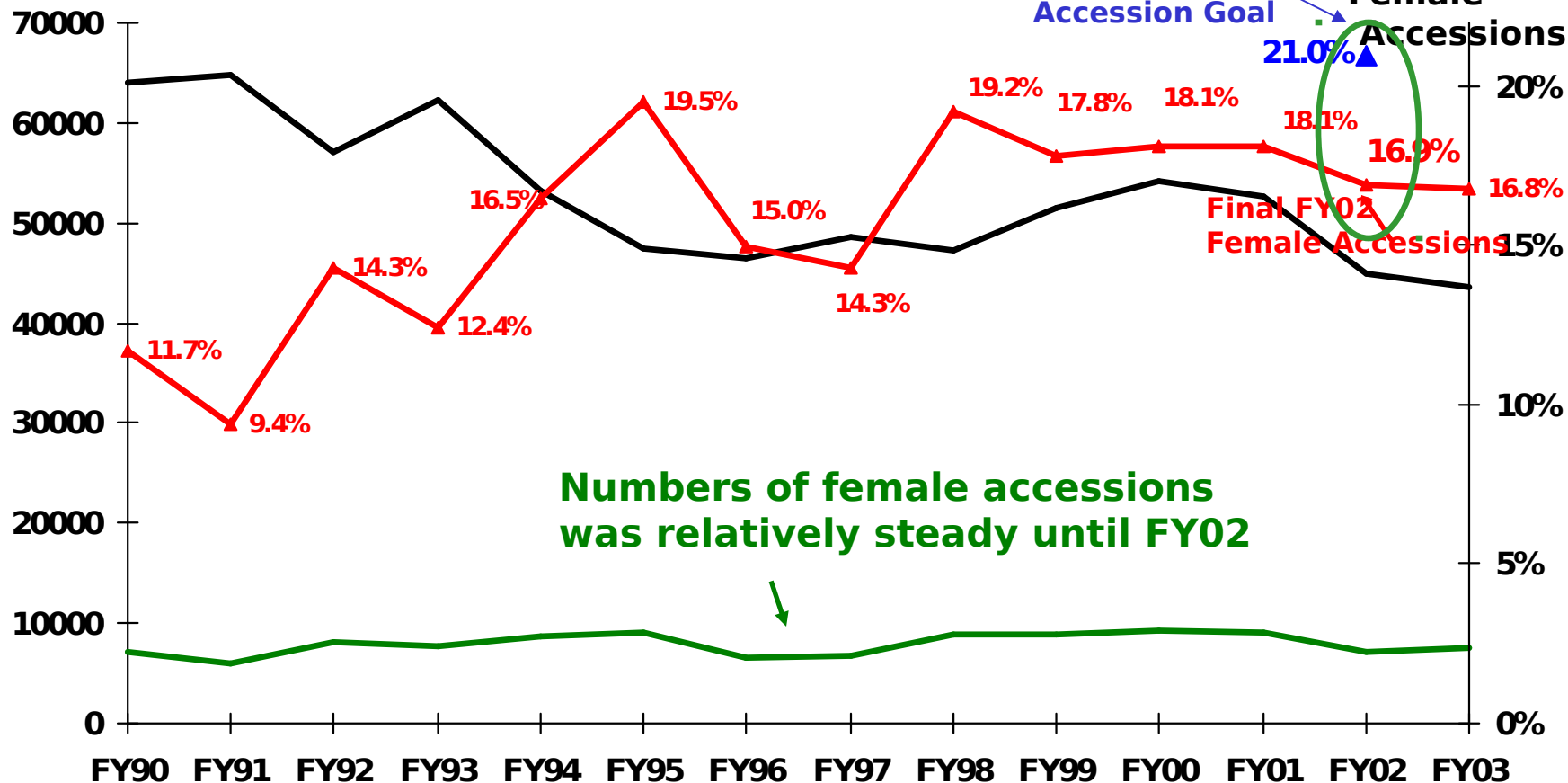Traditional
(21,776 Sailors)

Non-traditional ratings on average are significantly more sea intensive

Traditional ratings: CT, DK, DT, HM, IT, JO, LN, MS, NC, PC, PN, RP, SH, SK, YN

Female Accession Trends

Female Accession Trends

Total USN Accessions

Percent Female Accessions

Initial FY02 Female Accession Goal
21.0%

19.5%
16.5%
14.3%
11.7%
9.4%
12.4%
19.2%
17.8%
18.1%
18.1%
16.9%
15.0%
14.3%
16.8%

Final FY02 Female Accessions

Percentage of Female Accessions is declining

70000
60000
50000
40000
30000
20000
10000
0

20%
15%
10%
5%
0%

FY90 FY91 FY92 FY93 FY94 FY95 FY96 FY97 FY98 FY99 FY00 FY01 FY02 FY03

Total Accessions   Female NPS Accessions   Female NPS %   Female NPS % Goal

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Goal in Developing the WAS Model

- **Project impact of female bunk changes on Women at Sea manning**
- **Develop adjustments to female accession missions to synchronize with the projected navy-wide WAS bunk plan**
- **Look at impact of phase-out of Type 3 billets**
- **Gives user the flexibility to update model with new data and conduct "what if" drills**

- **Sea shore rotations vary widely by rating**
- **Continuation rates vary by rating and gender**
- **Billets are not assigned by gender**
- **No Navy policy on gender accession goals or inventory goals**

Factors included in WAS Model

- **Enlisted Inventory (Sep 02 Skipper)**
  - Gender, LOS
- **Enlisted Billet Base (Dec 02 Ministats)**
  - Adjusted for Type 3 billets, Type 2 Shore Squadron billets, and FMF billets
- **Continuation Rates (Sep 02 Skipper)**
- **FY03 Accession Plan (Rev 3 – Dec 02)**
  - Boot Camp and Pipeline attrition plus training pipeline length are factored in
- **Current Sea Shore Rotation Policy**
- **Gendet Advancements (Mar 02 exam)**
- **Projected female bunks at sea (E1-6, CPO)**

Female E1-E6 Bunk Plan
End of FY; Ship plus embarked

Legend:
- LHA/LHD/LSD/LCC/LST
- CV/CVN
- AUX/CLF/MHC
- CG47/DD963
- DDG51
- LPD17

14819

15812

20875

Y-axis: 0, 5000, 10000, 15000, 20000, 25000

X-axis: FY-02, FY-03, FY-04, FY-05, FY-06, FY-07, FY-08, FY-09

WAS Model Flowchart

Training Pipeline

For each EMC, the combined length of initial training including boot camp in days. Used to calculate delay in changes to accessions

Source: Input
File: WAS Initial Training Pipeline.xls

Main User Interface

(User input and model results)

UserInterface.xls (or UserInterfaceOpt.xls)

Links: Ministats.xls

User Inputs

By FY, set the number of Bunks available for females

Accession plan for FY03 is baseline, user adjusts future female accession percentage from this base (up or down)

File: FY03 Rating Goal adjusted for WAS.xls

Outputs

By FY, the projected inventory by grade and EMC, with the number of missed female assignments

Projected Inv

For each EMC, a LOS vector is developed based on attrition from the previous year and the accession plan. Resulting vector is spread across ranks and each rank is scaled to the BA (FS+IA)
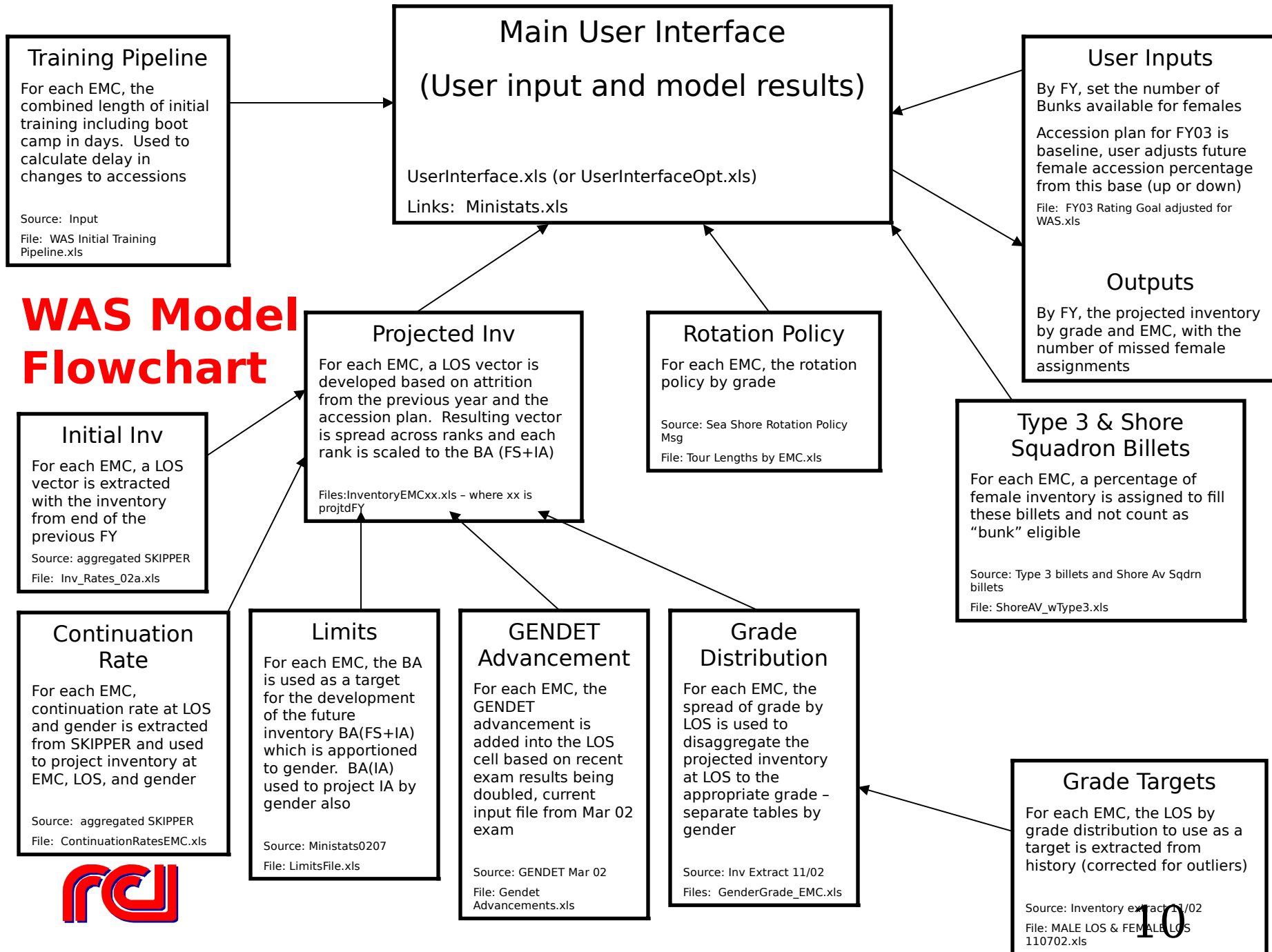
Files: InventoryEMCxx.xls – where xx is projtdFY

Rotation Policy

For each EMC, the rotation policy by grade

Source: Sea Shore Rotation Policy Msg
File: Tour Lengths by EMC.xls

Initial Inv

For each EMC, a LOS vector is extracted with the inventory from end of the previous FY

Source: aggregated SKIPPER
File: Inv_Rates_02a.xls

Type 3 & Shore Squadron Billets

For each EMC, a percentage of female inventory is assigned to fill these billets and not count as "bunk" eligible

Source: Type 3 billets and Shore Av Sqdrn billets
File: ShoreAV_wType3.xls

Continuation Rate

For each EMC, continuation rate at LOS and gender is extracted from SKIPPER and used to project inventory at EMC, LOS, and gender

Source: aggregated SKIPPER
File: ContinuationRatesEMC.xls

Limits

For each EMC, the BA is used as a target for the development of the future inventory BA(FS+IA) which is apportioned to gender. BA(IA) used to project IA by gender also

Source: Ministats0207
File: LimitsFile.xls

GENDET Advancement

For each EMC, the GENDET advancement is added into the LOS cell based on recent exam results being doubled, current input file from Mar 02 exam

Source: GENDET Mar 02
File: Gendet Advancements.xls

Grade Distribution

For each EMC, the spread of grade by LOS is used to disaggregate the projected inventory at LOS to the appropriate grade – separate tables by gender

Source: Inv Extract 11/02
Files: GenderGrade_EMC.xls

Grade Targets

For each EMC, the LOS by grade distribution to use as a target is extracted from history (corrected for outliers)

Source: Inventory extract 11/02
File: MALE LOS & FEMALE LOS 110702.xls

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Assumptions made in the WAS Model

- **The following inputs remain constant across the FYDP:**
  - **Historical continuation rates, by gender**
  - **FY03 Rev 3 accession split by EMC and total #**
  - **Gendet advancements**
  - **BA spread by rating**
    - **Including Type 3 and shore squadron**
  - **SSR tour lengths**
  - **Grade distribution by LOS within each EMC**
- **Model assumes that Inventory = BA**
  - **With a growth limiting factor**
- **Model assumes that women fill a fair share of Type 3, shore aviation and FMF billets**

Model Input / Output

- **Adjustable inputs (each year):**
  - **E1-6 Bunks available**
  - **E7-9 bunks available**
  - **Female percentage of accession mission**
  - **Female inventory on Type 3 Duty**
- **Output (each year)**
  - **E1-6 missed assignments**
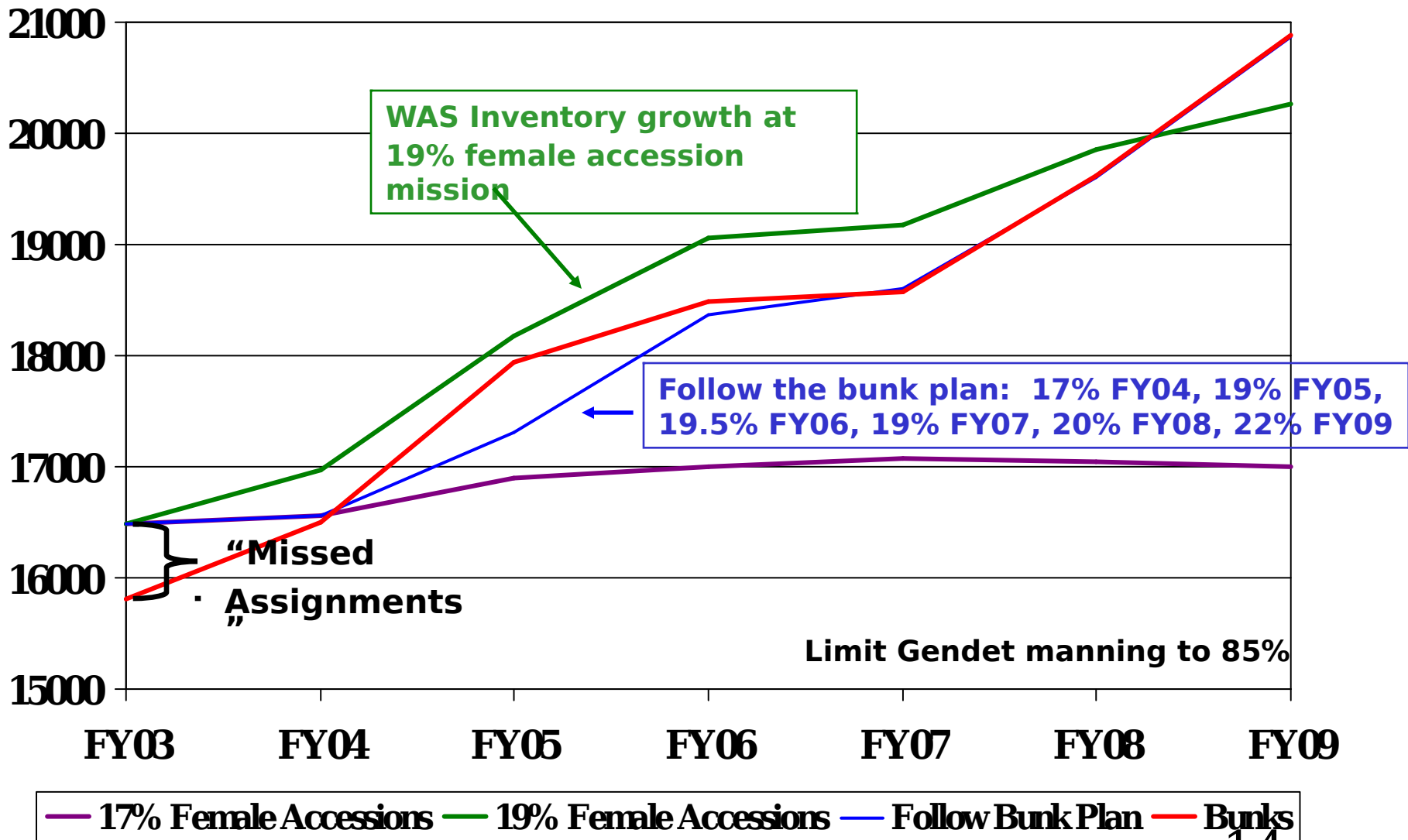 - **E7-9 missed assignments**

	Female Backdoor A-School Percent	Bunks Available		Type 3 Billets			Missed Assignments		
		E1-6	E7-9	E1-6	E7-9		E1-6	E7-9	
FY03	NA	15812	1021	0	0		666	-301	
FY04	17.10%	16494	1034	0	0		67	-298	
FY05	17.10%	17942	1082	0	0		-632	-287	
FY06	17.10%	18483	1086	0	0		-114	-290	
FY07	17.10%	18573	1088	0	0		27	-280	
FY08	17.10%	19618	1127	0	0		-21	-267	
FY09	17.10%	20875	1139	0	0		-7	-273	

User Changeable Cells

A positive number indicates an excess of female sea inventory over female bunks

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WAS Model Runs

WAS Inventory growth at 19% female accession mission

Follow the bunk plan: 17% FY04, 19% FY05, 19.5% FY06, 19% FY07, 20% FY08, 22% FY09

"Missed · Assignments"

Limit Gendet manning to 85%

Legend: —— 17% Female Accessions   —— 19% Female Accessions   —— Follow Bunk Plan   —— Bunks

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Questions?